

# ONKYO SERVICE MANUAL

## STEREO CASSETTE TAPE DECK MODEL TA-207

### Black and Silver model

UND, UDC, UD	120V AC, 60Hz
UP	230V AC, 50Hz
UW	120V or 220V AC, 50/60Hz
UQA	240V AC, 50Hz

### SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY MARK **A** ON THE SCHEMATIC DIAGRAM AND IN THE PARTS LIST ARE CRITICAL FOR RISK OF FIRE AND ELECTRIC SHOCK. REPLACE THESE COMPONENTS WITH ONKYO PARTS WHOSE PARTS NUMBERS APPEAR AS SHOWN IN THIS MANUAL.

MAKE LEAKAGE-CURRENT OR RESISTANCE MEASUREMENTS TO DETERMINE THAT EXPOSED PARTS ARE ACCEPTABLY INSULATED FROM THE SUPPLY CIRCUIT BEFORE RETURNING THE APPLIANCE TO THE CUSTOMER.

## SPECIFICATIONS

Track Format: 4-tracks, 2-channels  
Erasing System: AC erase  
Tape Speed: 4.8 cm/sec. (1-7/8 i.p.s.)  
Wow and Flutter: 0.04% (WRMS)  
Frequency Response: 20 – 18,000Hz (Normal)  
(30 – 17,000Hz  $\pm$  3dB)  
20 – 19,000Hz (High)  
(30 – 18,000Hz  $\pm$  3dB)  
20 – 20,000Hz (Metal)  
(30 – 19,000Hz  $\pm$  3dB)

S/N Ratio: 60dB (metal tape, Dolby NR off)  
A noise reduction of 10dB above 5kHz and 5dB at 1kHz is possible with Dolby B NR. A noise reduction of 20dB at 5kHz is possible with Dolby C NR.

Input Jacks: LINE IN: 2  
Input sensitivity: 80mV  
Input impedance: 50kohms

Outputs: LINE OUT: 2  
Standard output level: 500mV (0dB)  
Optimum load impedance: over 50 kohms  
Headphone jack: 1  
Optimum load impedance: 8 to 200 ohms

Motors: DC servo motor: 1  
DC motor: 2

Heads: REC/PB: Special Hard Permalloy x 2  
Erase head: Ferrite x 1

Power Supply Rating: U.K. and Australian models:  
AC 240V, 50Hz  
U.S.A. and Canadian models:  
AC 120V, 60Hz  
Worldwide models:  
AC 120V and 220V switchable, 50/60Hz

Power Consumption: 25 watts

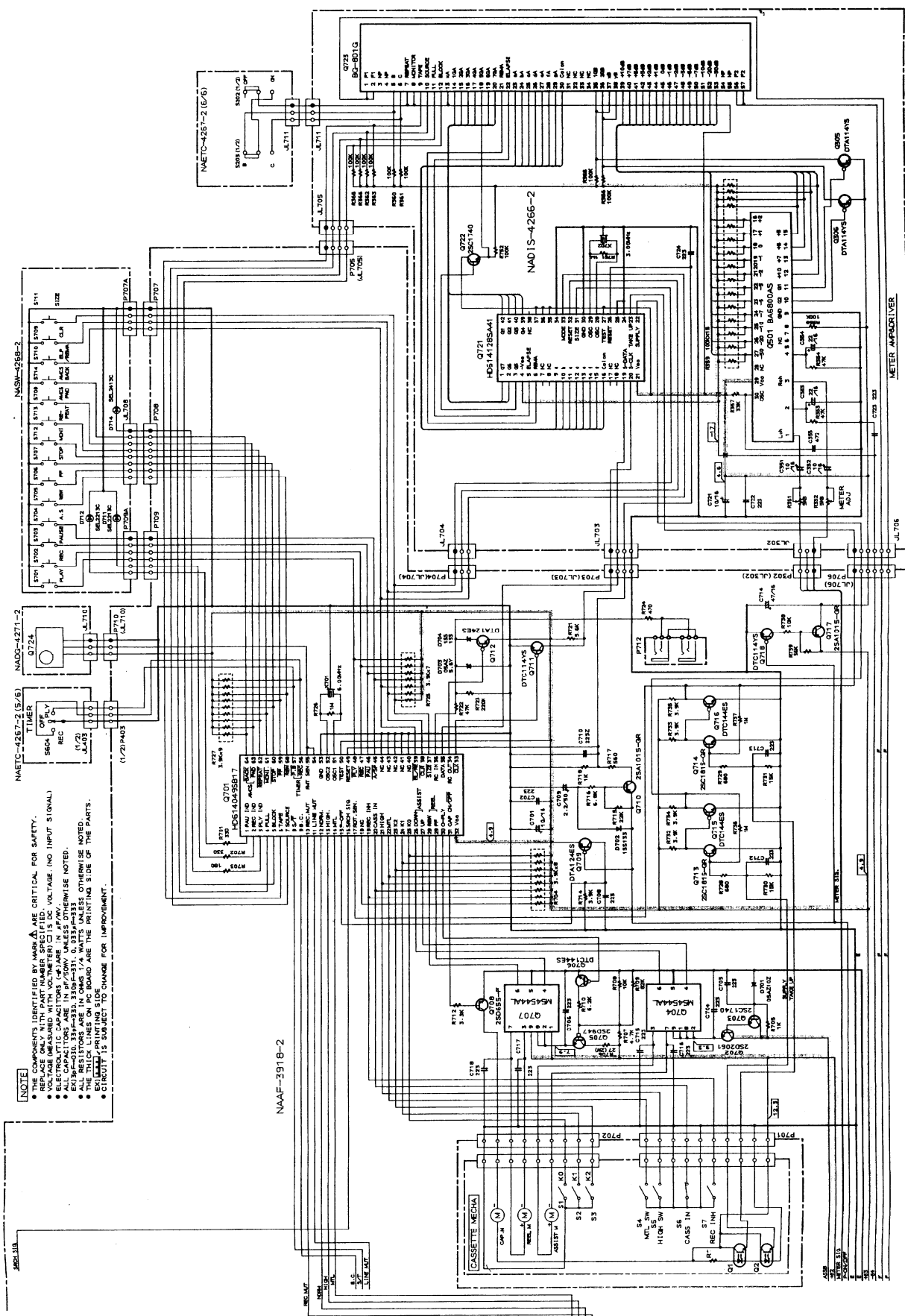
Dimensions: 455(W) x 131(H) x 368(D)mm  
(17-15/16" x 5-3/16" x 14-1/2")

Weight: 6.8 kg. (15 lbs.)

Supplied Accessories: Connecting cable x 2  
RC-214K remote control transmitter  
UM-4/R03/AAA battery x 2

Specifications and external appearance are subject to change without notice because of product improvements.





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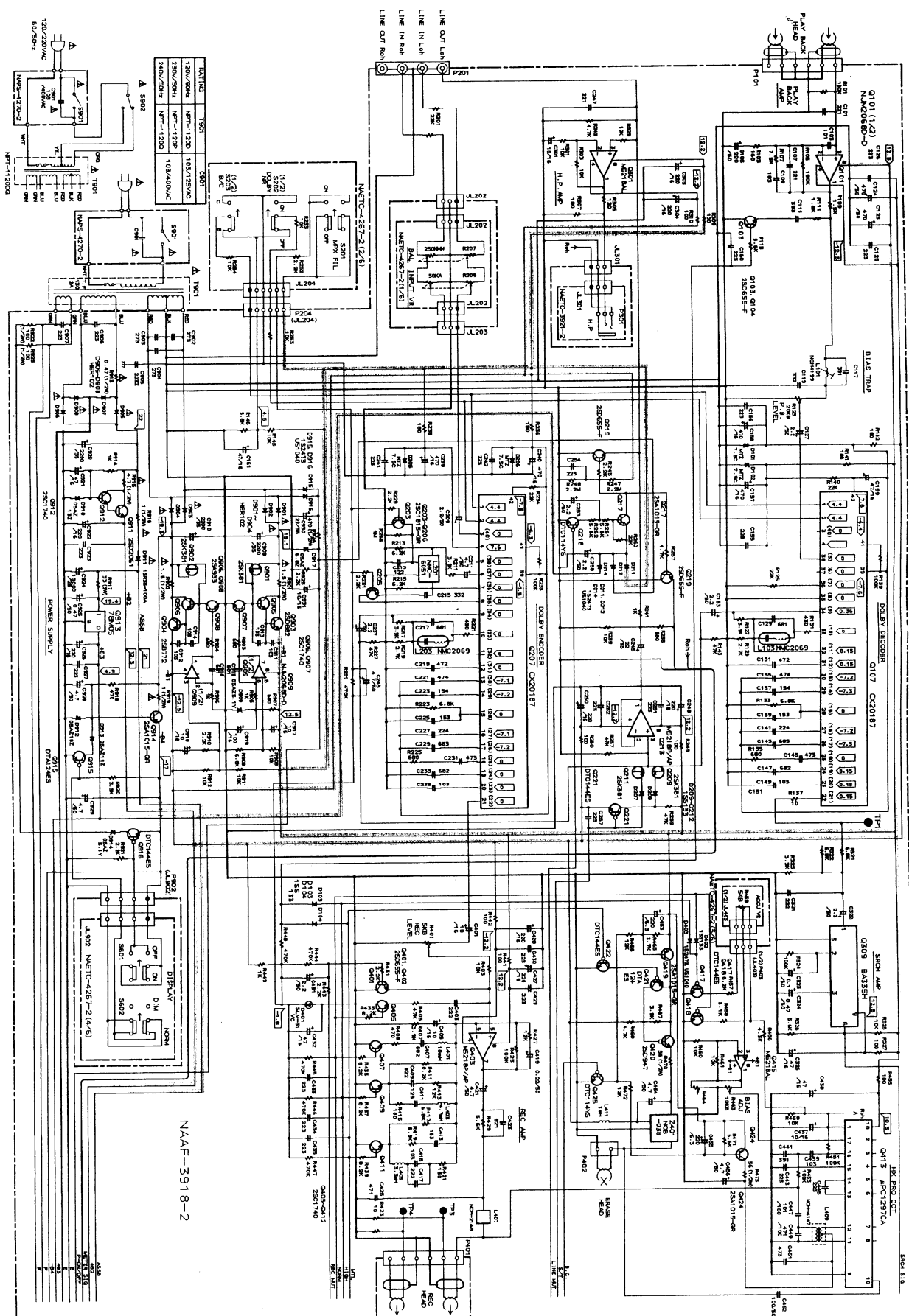
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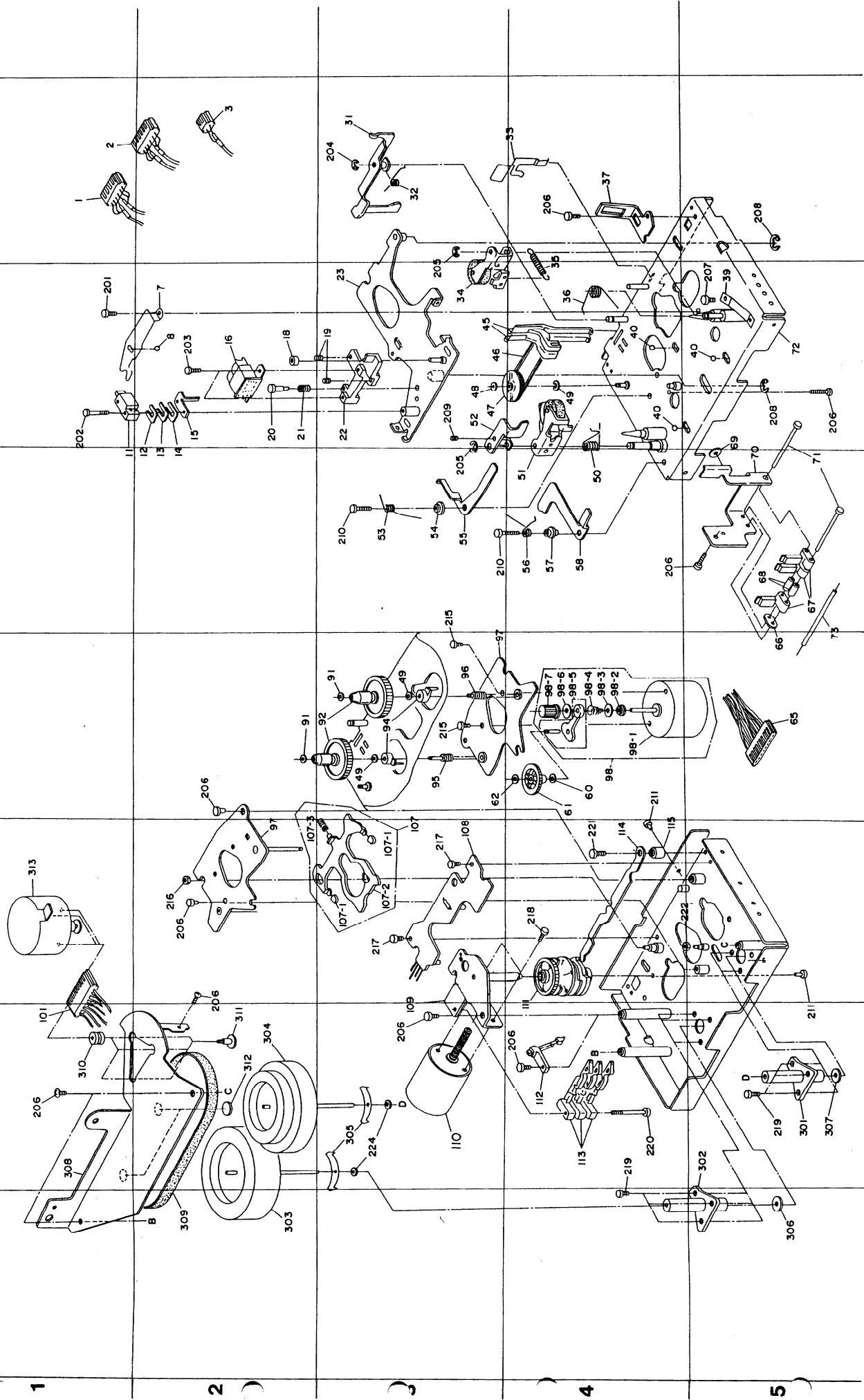
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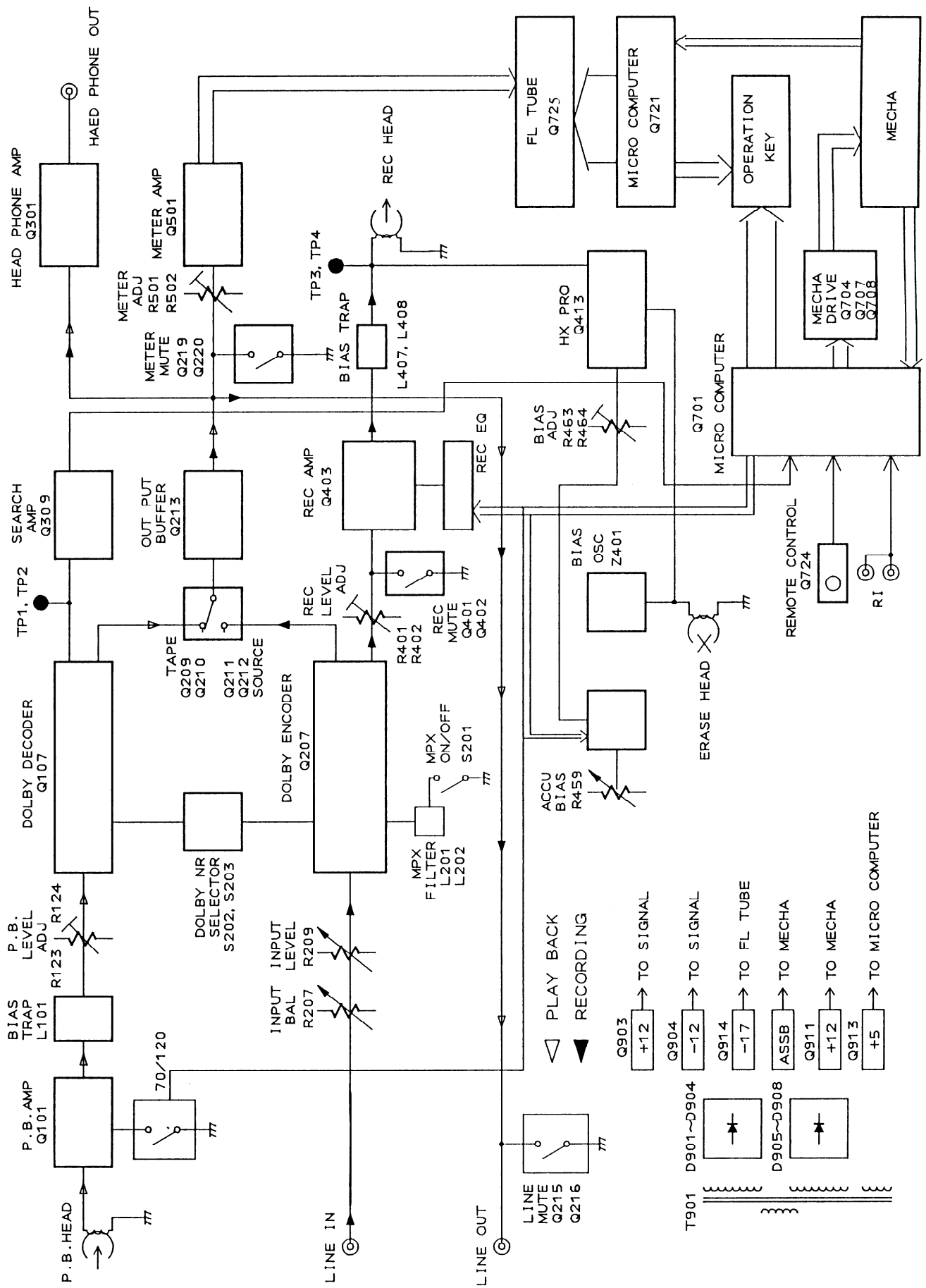
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## TAPE MECHANISM-EXPLODED VIEW

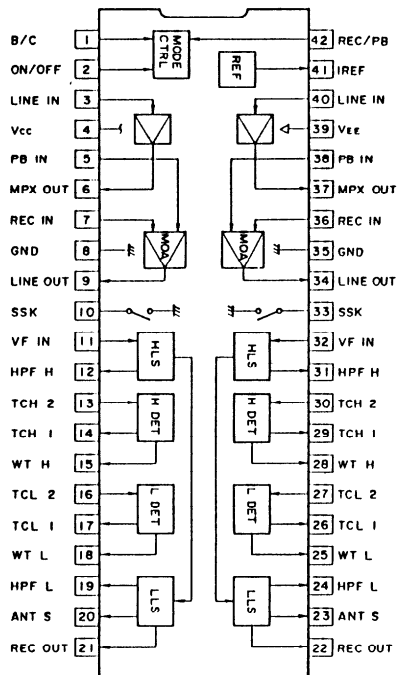


## BLOCK DIAGRAM

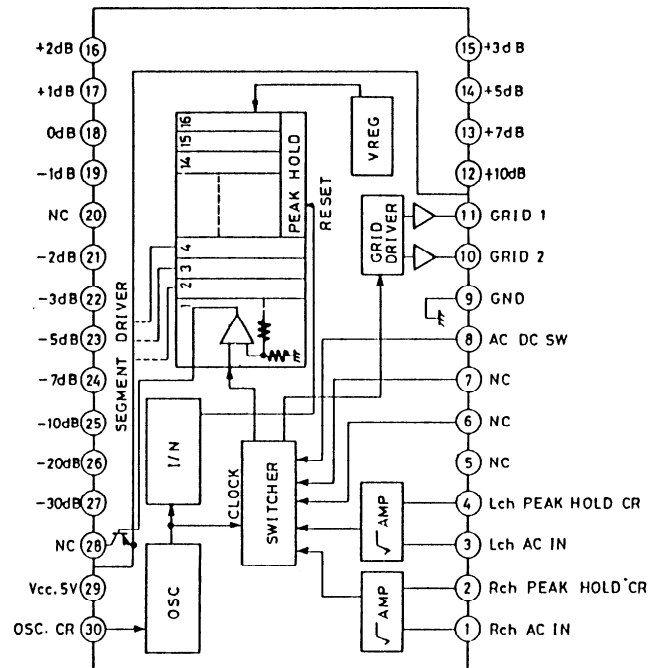


# IC BLOCK DIAGRAM

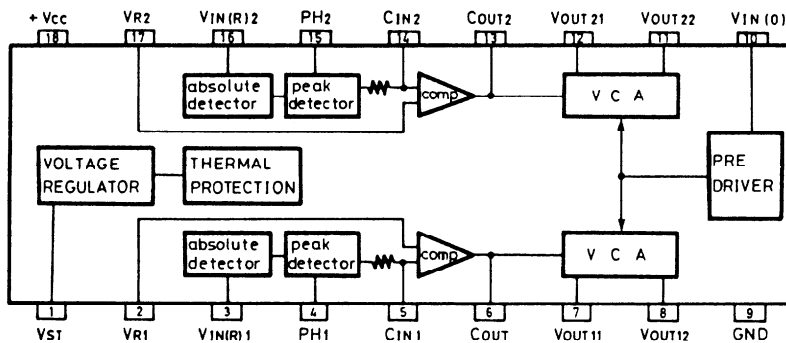
## CX20187 (DOLBY NR)



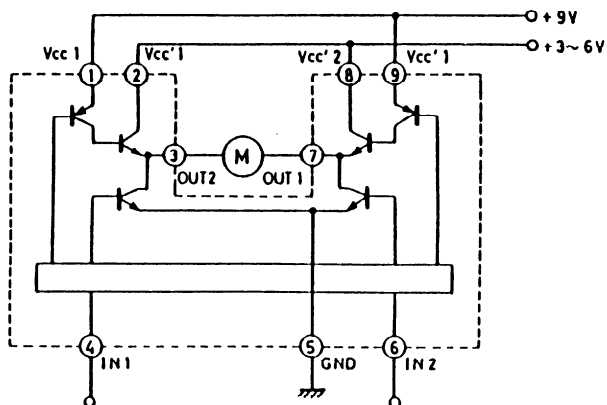
## BA6800AS (METER DRIVE)



## μPC1297CA (HX PRO)



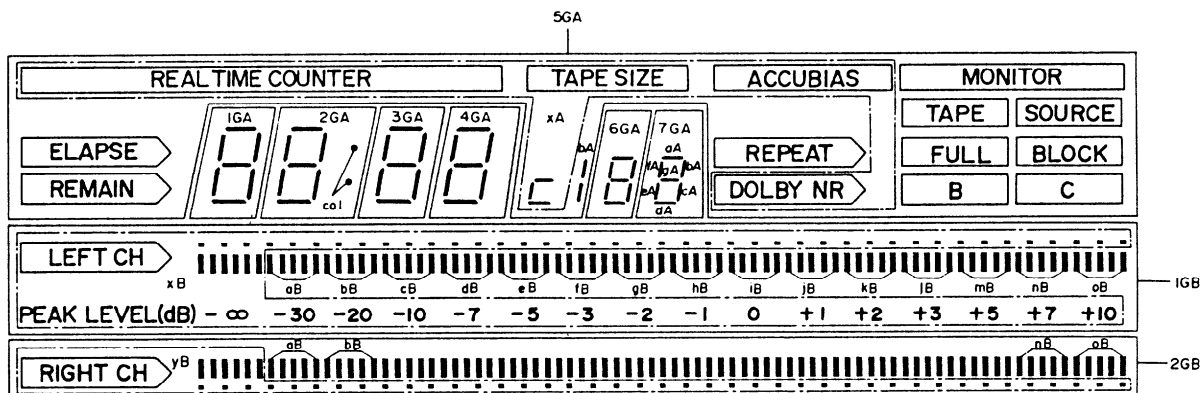
## M54544AL (MOTOR DRIVE)



INPUT		OUTPUT		Remark
# 4	# 6	# 3	# 7	
L	L	OFF	OFF	—
H	L	H	L	FWD
L	H	L	H	REV
H	H	L	L	Brake

# BG-801G (DISPLAY TUBE)

## GRID ASSIGNMENT



## PIN CONNECTION

PIN NO.	40	39	38	37	36	35	34	33	32	31	30	29	28	27	26	25	24	23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1
CONNECTION	n	o	y	x	2G	1G	N	N	N	N	h	g	f	e	d	c	b	a	j	i	7G	6G	5G	4G	3G	2G	1G	x	p	o	n	m	l	k	r	q	N	N	F	F
	B	B	B	B	B	B	C	C	C	C	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	P	P	1	1

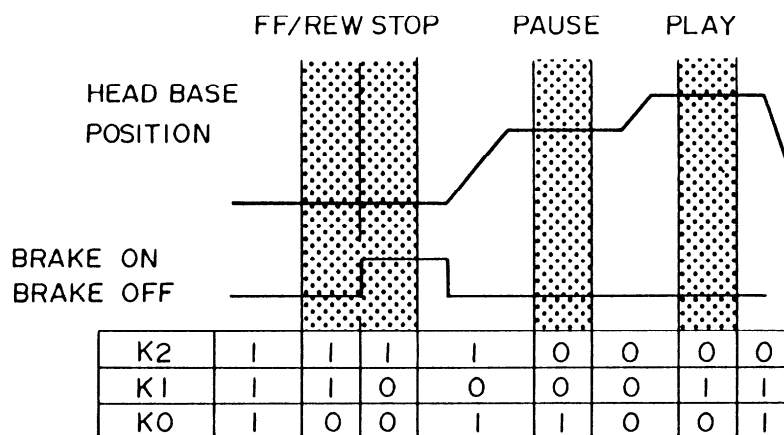
PIN NO.	57	56	55	54	53	52	51	50	49	48	47	46	45	44	43	42	41
CONNECTION	F	F	N	N	a	b	c	d	e	f	g	h	i	j	k	l	m
	2	2	P	P	B	B	B	B	B	B	B	B	B	B	B	B	B

Note 1.)NP.....No pin.  
 2.)NC.....No connection  
 3.)F1,F2.....Filament  
 4.)1GA~7GA.....Grid  
 5.)1GB~2GB.....Grid

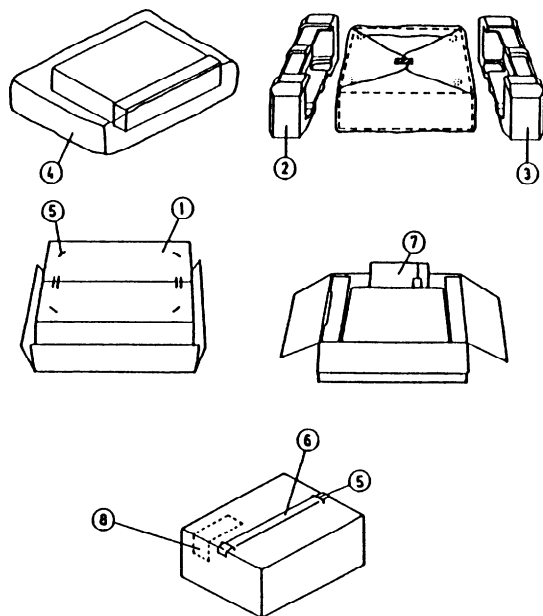
## ANODE CONNECTION

	1GA	2GA	3GA	4GA	5GA	6GA	7GA		1GB	2GB
aA	aA	aA	aA	aA	-	aA	aA	aB		
bA	bA	bA	bA	bA	/	bA	bA	bB		
cA	cA	cA	cA	cA	-	cA	cA	cB		
dA	dA	dA	dA	dA	-	dA	dA	dB		
eA	eA	eA	eA	eA	-	eA	eA	eB		
fA	fA	fA	fA	fA	-	fA	fA	fB		
gA	gA	gA	gA	gA	-	gA	gA	gB		
hA	-	col	-	-	-	-	-	hB		
iA	-	-	-	-	REMAIN	-	-	iB		
jA	-	-	-	-	ELAPSE	-	-	jB		
kA	-	-	-	-	REPEAT	-	-	kB		
lA	-	-	-	-	MONITOR	-	-	lB		
mA	-	-	-	-	TAPE	-	-	mB		
nA	-	-	-	-	SOURCE	-	-	nB		
oA	-	-	-	-	FULL	-	-	oB		
pA	-	-	-	-	BLOCK	-	-	xD		-
qA	-	-	-	-	B	-	-	PEAK LEVEL (dB) ~ +10		
rA	-	-	-	-	C	-	-	yB	-	
xA	-	-	-	-	REAL TIME COUNTER	-	-			
					TAPE SIZE					
					ACCUBIAS					
					DOLBY NR					

## MECHANICAL POSITION CORD



## PACKING VIEW



## PARTS LIST

REF. NO.	PART NO.	DESCRIPTION
1	29052290	Master carton box (Black model)
	29052290-3	Master carton box (Silver model)
2	29091518A	Pad (L)
3	29091519A	Pad (R)
4	29095012-1	Protection sheet
	29100105	620×550× Poly bag
	29095608	200×40×2t, Protection sheet (Cassette lid)
5	282301	Sealing hook
6	2911007-1	Damplon tape
<b>ACCESSORY BAG ASS'Y</b>		
7	29341668	Instruction manual
	2010098A	Connection cable
	29100006A	350×250 Poly bag
	24140214	RC-214K, remocon unit
	3010124	UM-4, batteries
	29365024A	Warranty card (F)
	25055040	CV plug CV-K-2 (W)

NOTE [W]: Only Worldwide model  
[F]: Only France model



# PRINTED CIRCUIT BOARD PARTS LIST

## NAAF-3918-2

CIRCUIT NO.	PART NO.	DESCRIPTION	CIRCUIT NO.	PART NO.	DESCRIPTION
<b>Ics</b>					
Q101	222956	NJM-2068D-D	Q912	2202116	2SD2061-F
Q107	222999	CX-20187		2213284 or	2SC1740S-R or
Q207	222999	CX-20187	Q914	2213285	2SC1740S-S
Q213	22240369	M5218AP	Q915	2211455	2SA1015-GR
Q301	22240368	M5218AL	Q916	2212600	DTA124ES
Q309	222940	BA335H		221282 or	DTC144ES or
Q403	22240369	M5218AP		2213560	RN1204
Q413	222959	$\mu$ PC1297CA	<b>Diodes</b>		
Q415	22240368	M5218AL	D101, D102	224450753	MTZ7.5C
Q701	22240542	HD614049SB17	D103, D104	223163	1SS133
Q704	222953	M-54544AL	D205, D206	224450753	MTZ7.5C
Q707	222953	M-54544AL	D207-D210	223163	1SS133
Q909	222956	NJM-2068D-D	D211, D212	223124 or	1S2473 or
Q913	222780055MIT	78M05		223150	US1040
<b>Transistors</b>			D213	223163	1SS133
Q103, Q104	2211706	2SD655-F	D214	223124 or	1S2473 or
Q203-Q206	2211255	2SC1815-GR		223150	US1040
Q209-Q212	2212304 or	2SK381-D or	D401	225227	SLV-31VC
	2212305	2SK381-E	D402	223163	1SS133
Q215, Q216	2211706	2SD655-F	D403	223124 or	1S2473 or
Q217	2211455	2SA1015-GR		223150	US1040
Q218	221281 or	DTC114YS or	D701	224451004 or	MTZ10D or
	2213570	RN1207		224151004	05AZ10R
Q219, Q220	2211706	2SD655-F	D702	223163	1SS133
Q221	221282 or	DTC144ES or	D703	224150562	05AZ5.6Y
	2213560	RN1204	D704	223163	1SS133
Q401, Q402	2211706	2SD655-F	D901-D908	22380029	HER102
Q405-Q412	2213284 or	2SC1740S-R or	D909	224150512	05AZ5.1Y
	2213285	2SC1740S-S	D910	224151303	05AZ13Z
Q417, Q418	221282 or	DTC144ES or	D911	22380027	1SR35-100A
	2213560	RN1204	D912	224151803	05AZ18Z
Q419	2211455	2SA1015-GR	D913	224151103	05AZ11Z
Q420	2201540	2SD947	D914	224150512	05AZ5.1Y
Q421	2212600	DTA124ES	D915, D916	223124 or	1S2473 or
Q422	221282 or	DTC144ES or		223150	US1040
	2213560	RN1204	D917	224150683	05AZ6.8Z
Q424	2211455	2SA1015-GR	<b>Coils</b>		
Q425	221281 or	DTC114YS or	L101, L102	231147	NCH-4199
	2213570	RN1207	L103, L104	233382	NMC-2069
Q702	2202115 or	2SD2061-E or	L201, L202	233328	NMC-6051
	2202116	2SD2061-F	L203, L204	233382	NMC-2069
Q703	2213284 or	2SC1740S-R or	L401, L402	231089	NCH-2137
	2213285	2SC1740S-S	L403, L404	231085	NCH-2133
Q705	2201540	2SD947	L405, L406	231083	NCH-2131
Q706	221282 or	DTC144ES or	L407, L408	231101	NCH-2148
	2213560	RN1204	L409, L410	231100	NCH-4147
Q708	2211706	2SD655-F	L411	231077	NCH-2125
Q709	2212600	DTA124ES	Z401	231149	NOB-038
Q710	2211455	2SA1015-GR	<b>Ceramic osc</b>		
Q711	221281 or	DTC114YS or	X701	3010149	CST6.00MGW
	2213570	RN1207	<b>Capacitors</b>		
Q712	2212600	DTA124ES	C101, C102	372122214	220PF50V, ST.
Q713, Q714	2211255	2SC1815-GR	C105, C106	391982217	220 $\mu$ F50V, ELECT.
Q715, Q716	221282 or	DTC144ES or	C123, C124	391984717	470 $\mu$ F50V, ELECT.
	2213560	RN1204	C127, C128	391980227	2.2 $\mu$ F50V, ELECT.
Q717	2211455	2SA1015-GR	C153, C154	391980227	47 $\mu$ F16V, ELECT.
Q718	221281 or	DTC114YS or	C157, C158	391944717	470 $\mu$ F16V, ELECT.
	2213570	RN1207	C159, C161	391944707	47 $\mu$ F16V, ELECT.
Q901, Q902	2212304 or	2SK381-D or	C209, C210	391980227	2.2 $\mu$ F50V, ELECT.
	2212305	2SK381-E	C211, C212	391980477	4.7 $\mu$ F50V, ELECT.
Q903, Q904	2201275 or	2SB772-Q or	C237, C238	391980227	2.2 $\mu$ F50V, ELECT.
	2201276	2SB772-P	C239, C240	391944717	470 $\mu$ F16V, ELECT.
Q905, Q907	2213284 or	2SC1740S-R or	C243	391980477	4.7 $\mu$ F50V, ELECT.
	2213285	2SC1740S-S	C245, C246	391962207	22 $\mu$ F35V, ELECT.
Q906-Q908	2213354 or	2SA933S-R or	C249, C250	391942217	220 $\mu$ F16V, ELECT.
	2213355	2SA933S-S	C253	391980227	2.2 $\mu$ F50V, ELECT.
Q911	2202115 or	2SD2061-E or	C258	391980227	2.2 $\mu$ F50V, ELECT.

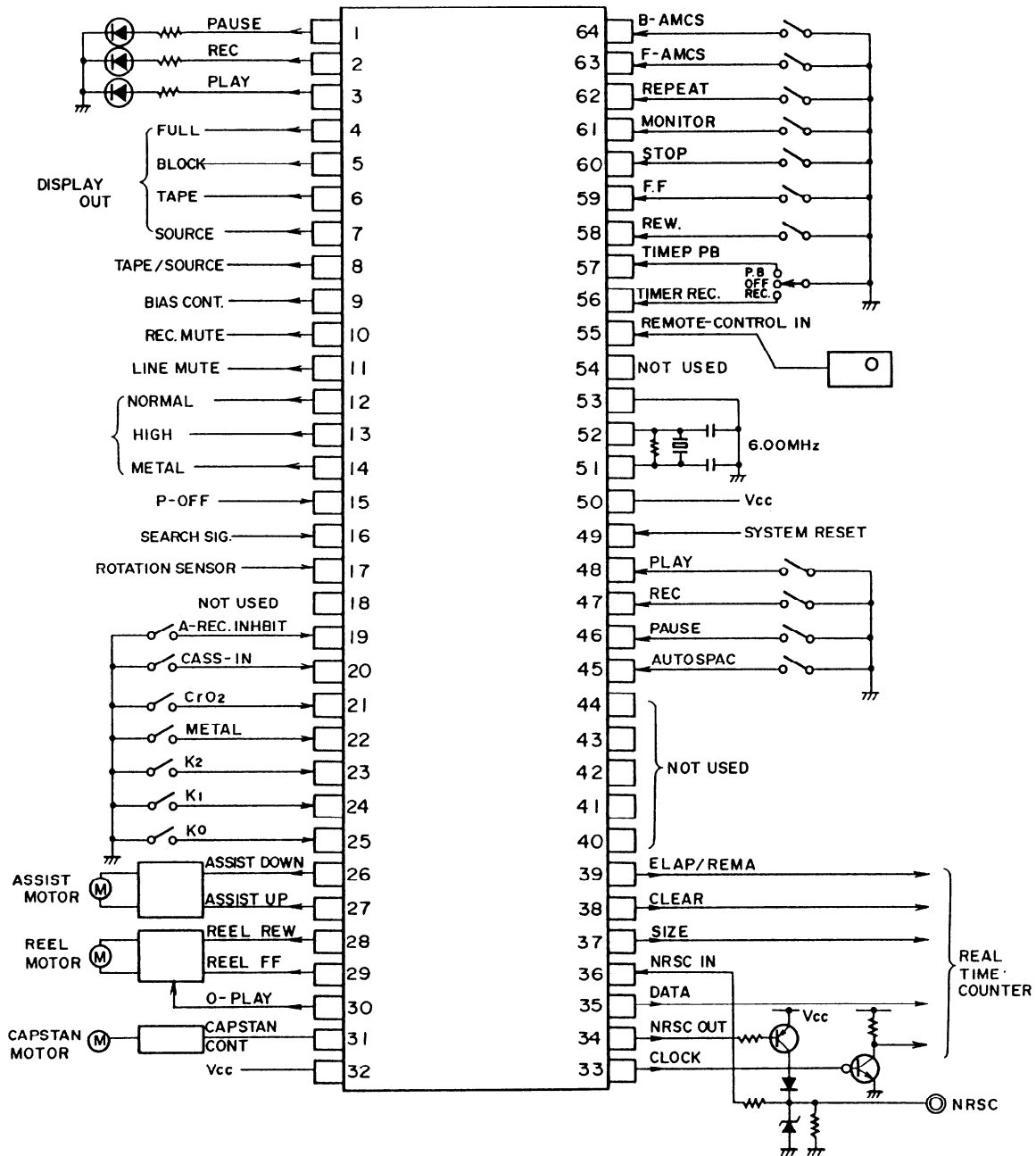
CIRCUIT NO.	PART NO.	DESCRIPTION	CIRCUIT
C301, C302	391941007	10 $\mu$ F16V, ELECT.	P710
C303, C304	391942217	220 $\mu$ F16V, ELECT.	P712
C322	391980227	2.2 $\mu$ F50V, ELECT.	P902
C323	391981097	0.1 $\mu$ F50V, ELECT.	
C324	391984797	0.47 $\mu$ F50V, ELECT.	
C325	391944707	47 $\mu$ F16V, ELECT.	
C401, C402	391941007	47 $\mu$ F16V, ELECT.	
C405, C406	391941007	10 $\mu$ F16V, ELECT.	
C419, C420	391982297	0.22 $\mu$ F50V, ELECT.	
C421, C422	391980477	4.7 $\mu$ F50V, ELECT.	
C427, C428	391942217	220 $\mu$ F16V, ELECT.	
C431	391980227	2.2 $\mu$ F50V, ELECT.	
C432	391944707	47 $\mu$ F16V, ELECT.	
C437	391941007	10 $\mu$ F16V, ELECT.	
C438	391944707	47 $\mu$ F16V, ELECT.	
C453, C455	391922217	220 $\mu$ F6.3V, ELECT.	
C454, C456	391980477	4.7 $\mu$ F50V, ELECT.	
C701	391941007	10 $\mu$ F16V, ELECT.	
C709	391980227	2.2 $\mu$ F50V, ELECT.	
C714	391944707	47 $\mu$ F16V, ELECT.	
C909, C910	391962227	2200 $\mu$ F35V, ELECT.	
C917, C918	391941007	10 $\mu$ F16V, ELECT.	
C919	391941017	100 $\mu$ F16V, ELECT.	
C920	391962227	2200 $\mu$ F35V, ELECT.	
C921	391944707	47 $\mu$ F16V, ELECT.	
C922	391942217	220 $\mu$ F16V, ELECT.	
C924	3504251	13000 $\mu$ F25V, ELECT.	
C925	391984797	0.47 $\mu$ F50V, ELECT.	
C926	391942217	220 $\mu$ F16V, ELECT.	
C928, C929	391980477	4.7 $\mu$ F50V, ELECT.	
C930	393062207	22 $\mu$ F35V, ELECT.	
C931	391941007	10 $\mu$ F16V, ELECT.	
<b>Resistors</b>			
R123, R124	5210218	N06HR20KBD	
R401, R402	5210216	N06HR5KBD	
R463, R464	5210217	N06HR10KBD	
R470	442525604F	RS1/2WBJ 56 $\Omega$	
R473	442525604F	RS1/2WBJ 56 $\Omega$	
R704	49163392408	3.9K $\Omega$ $\times$ 8, 1/10W	
R706	441722704F	RS2WBJ27 $\Omega$	
R725	49163392407	3.9K $\Omega$ $\times$ 7, 1/10W	
R727	49163392409	3.9K $\Omega$ $\times$ 9, 1/10W	
R901, R902	442520154F	RS1/2WBJ 1.5 $\Omega$	
R913	442524794F	RS1/2WBJ 0.47 $\Omega$	
R915, R916	442520104F	RS1/2WBJ 1 $\Omega$	
R917	441723304F	RS2WBJ 33 $\Omega$	
R919	442520104F	RS1/2WBJ 1 $\Omega$	
R922, R923	442521014F	RS1/2WBJ 100 $\Omega$	
R924	442524714F	RS1/2WBJ 470 $\Omega$	
<b>Plug, Socket</b>			
P101	25055136	NPLG-6P120	
P201	25045165	4PDBL-59	
P202, P203	25050267	NSCT-3P951	
P204	25050270	NSCT-6P98	
P302	25050267	NSCT-3P95	
P401	25055136	NPLG-6P120	
P402	25055132	NPLG-2P116	
P403	25050270	NSCT-6P98	
P501	25050267	NSCT-3P95	
P701	25055139	NPLG-9P123	
P702	25055140	NPLG-10P124	
P703	25050266	NSCT-4P96	
P704	25050267	NSCT-3P95	
P705	25050268	NSCT-4P96	
P706	25050270	NSCT-6P98	
P707	25055134	NPLG-4P118	
P708	25050272	NSCT-8P100	
P709	25050528	NSCT-6P351	

## Miscellaneous

R123, R124	5210218	N06HR20KBD
R401, R402	5210216	N06HR5KBD
R463, R464	5210217	N06HR10KBD
R470	442525604F	RS1/2WBJ 56 Ω
R473	442525604F	RS1/2WBJ 56 Ω
R704	49163392408	3.9KΩ×8, 1/10W
R706	441722704F	RS2WBJ27Ω
R725	49163392407	3.9KΩ×7, 1/10W
R727	49163392409	3.9KΩ×9, 1/10W
R901, R902	442520154F	RS1/2WBJ 1.5Ω
R913	442524794F	RS1/2WBJ 0.47 Ω
R915, R916	442520104F	RS1/2WBJ 1Ω
R917	441723304F	RS2WBJ 33 Ω
R919	442520104F	RS1/2WBJ 1Ω
R922, R923	442521014F	RS1/2WBJ 100Ω
R924	442524714F	RS1/2WBJ 470Ω

P101	25055136	NPLG-6P120
P201	25045165	4PDBL-59
P202, P203	25050267	NSCT-3P951
P204	25050270	NSCT-6P98
P302	25050267	NSCT-3P95
P401	25055136	NPLG-6P120
P402	25055132	NPLG-2P116
P403	25050270	NSCT-6P98
P501	25050267	NSCT-3P95
P701	25055139	NPLG-9P123
P702	25055140	NPLG-10P124
P703	25050266	NSCT-4P96
P704	25050267	NSCT-3P95
P705	25050268	NSCT-4P96
P706	25050270	NSCT-6P98
P707	25055134	NPLG-4P118
P708	25050272	NSCT-8P100
P709	25050528	NSCT-6P351

# MICRO COMPUTER (HD614049SB17)



**MICRO COMPUTER TERMINAL DESCRIPTION (HD614049SB17)**

Port No.	Name	Function
1	PAUSE LED	Pause indicator output
2	REC. LED	Record indicator output
3	PLAY LED	Play indicator output
4	FULL	Full repeat indicator output
5	BLOCK	Block repeat indicator output
6	TAPE	Tape monitor indicator output
7	SOURCE	Source monitor indicator output
8	TAPE/SOURCE	Monitor (tape/source) select output
9	BIAS CONTROL	Bias oscillator control output
10	REC. MUTE	Record muting output
11	LINE MUTE	Line muting output
12	NORMAL	Normal tape end detection output
13	HIGH	High tape end detection output
14	METAL	Metal tape end detection output
15	P-OFF	Power off detection input
16	SEARCH SIG.	Search signal input
17	ROTATION SENSOR	Reel rotation signal sensor input
18	NOT USED	
19	SIDE-A REC. INHIBITING	Side-A record inhibit pin sensor
20	CASSETTE IN	Cassette tape sensor switch input
21	CrO2	Tape type sensor switch input
22	METAL SWITCH	Tape type sensor switch input
23~25	MECHA. POSITION K2~K0	Mecha position sensor switch input
24	ASSIST DOWN	Assist motor drive output
27	ASSIST UP	Assist motor drive output
28	REEL REW	Reel motor REW rotation control output
29	REEL FF	Reel motor FF rotation control output
30	O-PLAY	Reel motor rotation torque control output
31	CAPSTAN CONTROL	capstan motor control output
32	V <sub>cc</sub>	+5V
33	CLOCK	Master-slave communication clock output
34	NRSC OUT	serial code reciprocal control signal out
35	DATA OUT	Master-slave communication data output
36	NRSC IN	Serial code reciprocal control signal input
37	COUNTER SIZE	Tape size select output
38	COUNTER CLEAR	Tape counter clear output
39	COUNTER ELAP/REMA	Tape elapse/remain select output
40~44	NOT USED	
45	AUTO SPACE KEY	Auto space key input
46	PAUSE KEY	Pause key input
47	REC KEY	Record key input
48	PLAY KEY	Play key input
49	SYSTEM RESET	Computer system reset
50	TEST	
51, 52	OSC1, OSC2	System clock oscillator terminal
53	GND	
54	NOT USED	
55	REMOTE-CONTROL IN	Remote control signal input
56	TIMER REC.	Timer record input
57	TIMER PB.	Timer play input
58	REW KEY	REW key input
59	FF KEY	FF key input
60	STOP KEY	Stop key input
61	MONITOR KEY	Monitor select key input
62	REPEAT KEY	Repeat key input
63	F-AMCS KEY	FWD play search signal input
64	B-AMCS KEY	REV play search signal input

# ADJUSTMENT PROCEDURES

## PRECAUTIONS

- Before adjustment, clean the following parts with an alcohol moistend swab.
  - \* record/playback head
  - \* erase head
  - \* pinch roller
  - \* capstan
- Do not use magnetized screwdriver for adjustments.
- Demagnetize record/playback head with a head demagnetizer.

## TEST EQUIPMENT/TOOLS REQUIRED:

Audio oscillator

Digital frequency counter

Oscilloscope

Attenuator

AC voltmeter

Non-magnetic screw driver

Test tapes

TCC-153 : 10 KHz, -10dB

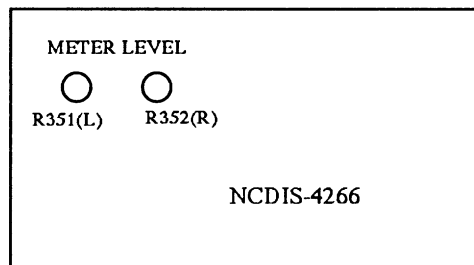
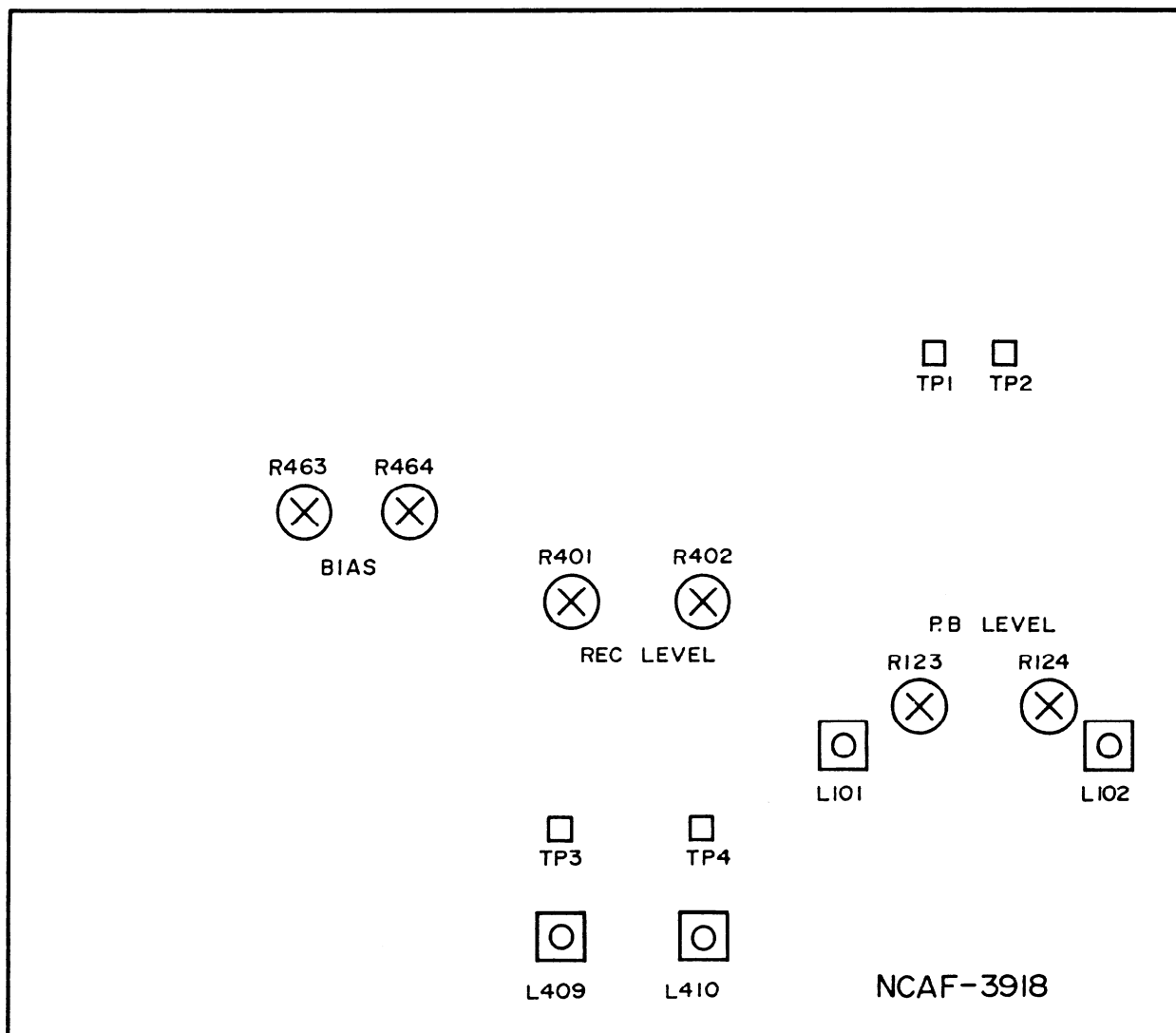
MTT-111 : 3 kHz, -10dB

MTT-150 : Dolby level calibration  
400Hz, tone 200nWb/m

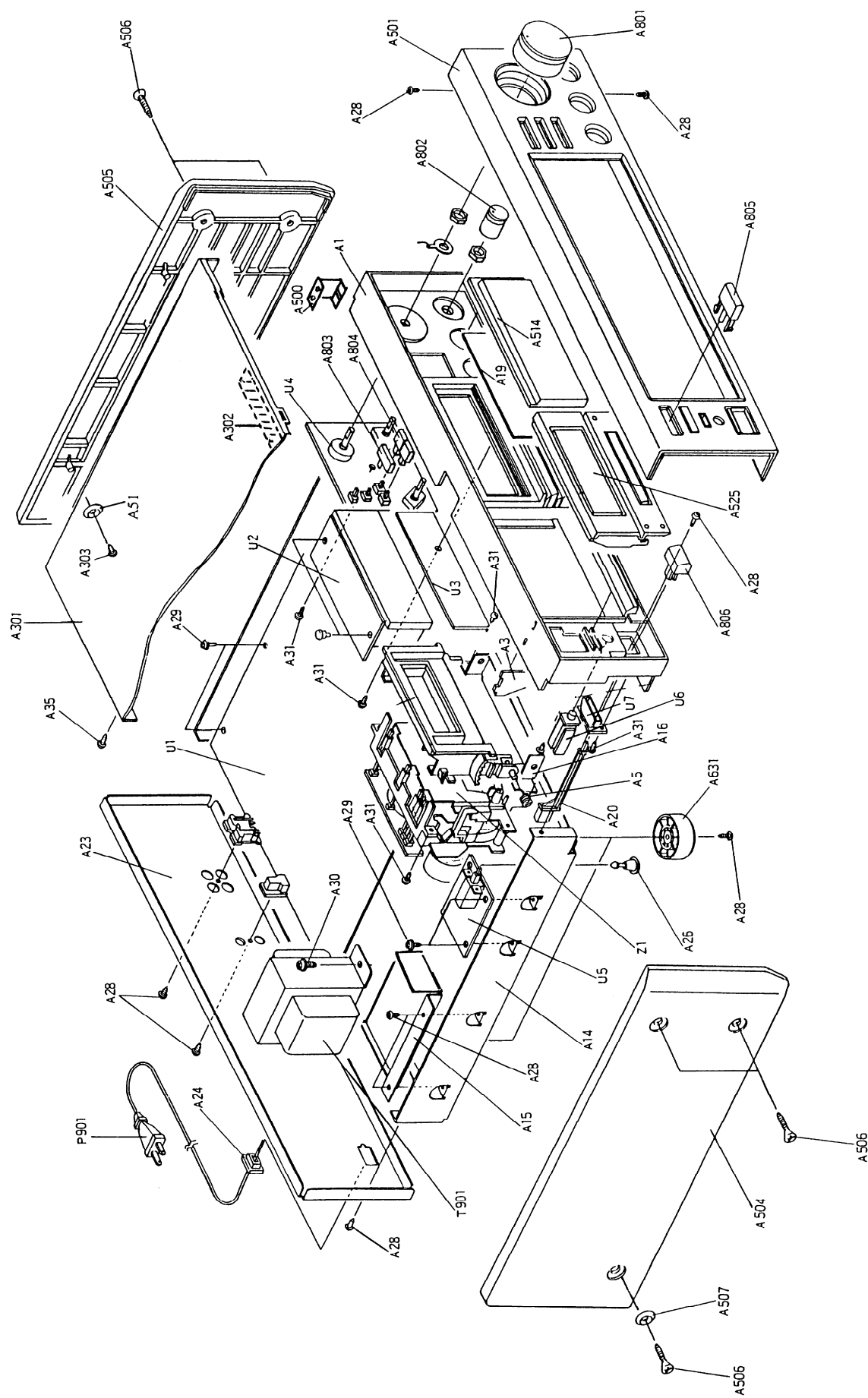
Item		Connection of instrument	Line input	Test tape	Mode	Output indicator	Adjustment point	Adjust	Remaks
1	Tape speed	Frequency counter to LINE output terminal		MTT-111	PB	Frequency counter	Semi-fixed on the moter	3,005 to 3,010Hz	
2	Head azimuth	AC voltmeter and oscillo-scope to Line output terminal		TCC-153	PB	AC voltmeter	Head azimuth screw	Maximum and same phase at channels L and R	
3	Playback level	AC voltmeter to terminals TP-L and TP-R		MTT-150	PB	AC voltmeter	R-123 (Ch. L) R-124 (Ch. R)	245mV	
4	Meter			MTT-150	PB	Level meter	R-351 (Ch. L) R-352 (Ch. R)	0db	NADIS4266-2
5	HX-PRO	AC voltmeter to terminals TP-3 and TP-4		METAL TAPE	REC	AC voltmeter	L-409 (Ch.L) L-410 (Ch.R)	Maximum	R-463 R-464 MAX
6	Bias current	AC voltmeter to LINE output terminal	1kHz, −20dB and 12kHz, −20dB	NEW XL-II90	REC/PB	AC voltmeter	R463 (Ch.L) R464 (Ch.R)	Same level at REC/PB	Input VR maximum.
7	Record level		1kHz		REC	AC voltmeter	Attenuator or AF OSC output	350mV	Input VR maximum
					REC/PB	AC voltmeter	R401 (Ch.L) R402 (Ch.R)	Same level at REC/PB	
8	Bias trap	AC voltmeter to LINE output termibal		METAL TAPE	REC	AC voltmeter	L-101 (Ch. L) L-102 (Ch. R)	Min bias leakage	

Blank tape  
 NORMAL ... NEW UD-1 C-90  
 HIGH ... XL-II C-90  
 METAL ... XS- C60  
 PLAY torque ... 35~60g/cm  
 FF. REW torque ... 70~180g/cm  
 Back tension ... 2~7g/cm

## ADJUSTMENT POINT



## CHASSIS-EXPLODED VIEW



# CHASSIS-EXPLODED VIEW PARTS LIST

REF.NO.	PARTS NO.	DESCRIPTION
A1	27110662A	FRONT BRACKET AS (B)
	27110663A	FRONT BRACKET AS (S)
A3	27273143	JOINT (EJ)
A14	27100247	CHASSIS
A15	27130608E	BRACKET (PT)
A16	27130662	BRACKET (MECHNISM)
A19	28133268	BACK PLATE
A20	27273069A	JOINT (POW)
A23	27121500	BACK PANEL (D)
	27121500-1	BACK PANEL (P)
	27121500-3	BACK PANEL (W)
A24	27300750	BUSHING (CORD)
A26	27190480	HOLDER (LED)
A28	834430088	TAP-TIGHT SCREW 3TTS+8BBC
A29	831130088	TAP-TIGHT SCREW 3TTW+8B
A30	830440089	TAP-TIGHT SCREW 4TTC+8CBC
	870065	PT WASHER
A31	833430080	TAP-TIGHT SCREW 3TTP+8PBC
A35	801230	TAPPING SCREW 3STS+8BQBC
A51	87644012	WASHER W4x12F BC
A301	28184490A	TOP COVER
A302	28140837	CUSHION 250x10x.9t
A303	834440088	TAP-TIGHT SCREW 4TTS+8BBC
A500	27141493	BRACKET (S)
A501	IN119121	FRONT PANEL AS (B)
	IN120121	FRONT PANEL AS (S)
A504	28185371	SIDE BOARD (L)
A505	28185372	SIDE BOARD (R)
A506	837440169	TAP-TIGHT SCREW 4TTT+16CBC
A507	87314008	TOOTH LOCK WASHER M-4B
A514	28191606	CLEAR PLATE
A525	28400728	CASSETTE LID AS (B)
-a	28400716A	CASSETTE LID (B)
-b	28400730	CASSETTE LID (BODY) (B)
-c	28400722	WINDOW (B)
-d	28194349	COSMETIC PLATE (WINDOW)(B)
A525	28400729	CASSETTE LID AS (S)
-a	28400717A	CASSETTE LID (S)
-b	28400731	CASSETTE LID (BODY) (S)
-c	28400722	WINDOW (S)
-d	28194349	COSMETIC PLATE (WINDOW)(S)
A631	27175254	LEG AS
A801	28324475	KNOB (INP) (B)
	28324476	KNOB (INP) (S)
	28324150-1	KNOB (LEV) (B)
A802	28324151	KNOB (LEV) (S)

REF.NO.	PARTS NO.	DESCRIPTION
A803	28324477	KNOB (MPX) (B)
	28324478	KNOB (MPX) (S)
A804	28324479	KNOB (PUSH) (B)
	28324480	KNOB (PUSH) (S)
A805	28323985	KNOB (EJ) (B)
	28324337	KNOB (EJ) (S)
A806	28324397	KNOB AS (POW) (B)
	28324398	KNOB AS (POW) (S)
P901	253168	AC CORD, AS-UC-6#18 (D)
	253149	AC CORD, AS-CEE (P/W)
S902	25065123	NSS-1258P (W)
T901	2300724A	NPT-1120D (D)
	2300725A	NPT-1120P (P)
	2300726A	NPT-1120DG (W)
U1	IN119518-2	NAAF-3918-2
U2	IN119566-2	NADIS-4266-2
U3	IN119568-2	NASW-4268-2
U4	IN119567-2	NAETC-4267-2
U5	IN119570-2	NAPS-4270-2
U6	IN119521-2	NAETC-3921-2
U7	IN119571-2	NADG-4271-2
Z1	244160	NDM-151, DECK MECHANISM

NOTE [P]: 230V Model  
[W]: Worldwide model  
[D]: 120V Model  
[S]: Silver model  
[B]: Black model

NOTE: THE COMPONENTS IDENTIFIED BY  
MARK **Δ** ARE CRITICAL FOR RISK OF  
FIRE AND ELECTRIC SHOCK. REPLACE  
ONLY WITH PARTS NUMBER SPECIFIED.



# TAPE MECHANISM PART LIST

REF.NO.	ADDRESS	PARTS NO.	DESCRIPTION	REF.NO.	ADDRESS	PARTS NO.	DESCRIPTION
1	G1	24606441	LEAD WIRE AS	98	D4	24601261	REEL MOTOR AS
2	G1	24606442	LEAD WIRE AS	98-1	D4	24601169	REEL MOTOR
3	G2	24606443	LEAD WIRE AS	98-2	D4	24611048	SPRING STAND
7	F2	24611481	PLATE (HEAD)	98-3	D4	24610374	WASHER
8	F2	24610943	STEEL BALL 3	98-4	D4	24605467	SPRING
11	F2	24600084	E HEAD	98-5	D4	24602471	IDLER AS
12	F2	24611060	SPACER 0.06t	98-6	D4	24610970	FELT
13	F2	24611061	SPACER 0.03t	98-7	D4	24602237A	GEAR (MOTOR)
14	F2	24611062	SPACER 0.1t	101	B1	24606445	LEAD WIRE AS
15	F2	24610653	BRACKET B (H HEAD)	107	C3	24611043	BRALE PLATE AS
16	F2	24600082	R/P HEAD	107-1	C3	24610999	BRALE RUBBER
18	F2	24610495	ADJUSTING NUT	107-2	C3	24611053A	BRALE PLATE
19	F3	801251	SCREW M2×4	107-3	C3	24605472	SPRING
20	F2	24610652	SHAFT	108	C3	24606446	P.C.B. AS (SENSOR)
21	F2	24605502	SPRING	109	C3	24611482	BRACKET AS
22	F3	24611046	HEAD BLOCK	110	B3	24601266	PAD MOTOR AS
23	F3	24611064	HEAD BASE AS	111	C4	24602532	CAM GEAR
31	G3	24603284	LEVER (READER)	112	B4	24606104	LEAF SWITCH
32	G3	24605506	SPRING	113	B4	24606119	LEAF SWITCH
33	G3	24605507	SPRING (CASSETTE)	114	C4	24611075	CONNECTING PLATE
34	F3	24602270	PINCH ROLLER AS	115	C4	24604064	COLLAR
35	G4	24605244	SPRING	201	F1	833130047	TAP-TIGHT SCREW
36	F4	24605709	SPRING				M3×4
37	G4	24610659A	PROTECTOR	202	F1	82512012	BIND SCREW M2×12
39	F5	24605188	SPRING (CASSETTE)	203	F2	801250	PAN-HEAD SCREW
40	F4	24610351	STEEL BALL (CHASSIS				M2+4SW
			22) φ2	204	G3	8930251	E WASHER
45	F3	24603205	LEVER (REC)	205	E3	8930201	E WASHER
46	F3	24602271	BELT	206	B1 C2	833125069	SCREW
47	F3	24601167	PULLEY AS	207	F5	801292	TAP-TIGHR SCREW
48	F3	24611003	WASHER 1.8×3.8×0.5				M2×3.2
49	F4	24611047	WASHER 2.1×4.5×0.1	208	F5	893030	E WASHER 3
50	E4	24605707	SPRING	209	F3	801263	SCREW M2×3
51	E4	24602478	PINCH ROLLER AS	210	E3	24609014	SCREW M2.5×8
52	E3	24611065	LEVER (ADJUSTING)	211	C4	801325	PAN HEAD SCREW
53	E3	24605510	SPRING				M2+5SW
54	E3	24604065	COLLAR	215	E3	82512603	BIND SCREW
55	E3	24603286	LEVER (SELECTOR)	216	C2	863720	NUT N-2BSNI
56	E4	24605710	SPRING	217	C3	83312604	TAP-TIGH SCREW
57	E4	24604052	COLLAR				M2.6×
58	E4	24611066	LOCK PLATE	218	C4	801259	SCREW M2+3
60	D4	24611141	WASHER 1.7×6×0.25	219	B4	833125059	TAP-TIHH SCREW
61	D4	24602531	GEAR				M2.5+5
62	D3	24610969	WASHER	220	B4	833125209	TAP-TIHH M2.5+20
65	D5	24606447	LEAD WIRE AS	221	C4	833125209	TAP-TIHH 2.6TTP+12S
66	E5	24622057	WASHER	222	C4	863126	NUT N-2.6F
67	E5	24606205	LEAF SWITCH	224	B3	24610515	WASHER
68	E5	24604063	COLLAT	301	B5	24611372	STAND AS (CAPTAN)
69	F5	24611142	WASHER 2.7×0.5	302	B5	24611373	STAND AS (CAPTAN)
70	E5	24611068	BRACKET (SW)	303	A2	24602472	FLYWHEEL
71	E5	82112030	PAN HEAD SCREW	304	B2	24602473	FLYWHEEL
72	F5	24611370	MECHANISM CHASSIS	305	B3	24605452	SPRING (THRUST)
			AS	306	A5	24611485	WASHER
73	E5	24606444	LEAD WIRE	307	B5	24611486	WASHER
91	D3	24610349	WASHER 1.8×3.2×0.5	308	B1	24611376	BRACKET
92	D3	24602534	REEL AS	309	A2	24602476	BELT
94	D3	24611072	SPRING STAND	310	B1	24610723	CUSHION
95	D3	24605505	SPRING	311	B2	24609015	SCREW (MOTOR)
96	D3	24605501	SPRING	312	B2	24611377	THRUST WASHER
97	D3	24611371	BRACKET AS (MOTOR)	313	C1	24601267	CAPSTAN MOTOR AS

# FRAME (CASSETTE) EXPLODED VIEW PARTS LIST

REF. NO.	PART NO.	DESCRIPTION
1	24611451B	PLATE AS (S)
2	24605748	SPRING (L)
3	24605749	SPRING (R)
5	24611457	CUSHION (A)
6	24611450	PLATE (A)
7	24611455A	HOLDER (L)
8	24611456A	HOLDER (R)
9	24605750	SPRING
10	801437	TAPPING SCREW
11	24611459	PLASTIC WASHER
12	24611453B	SIDE BRACKET AS (L)
13	24611454C	SIDE BRACKET (R)
14	24611476B	BACK PLATE (CASSETTE)
15	24611458	CUSHION (B)
16	24603285	LEVER (CHANCEL)
17	8761401005	WASHER FW 4.2×10×0.5×0.5
18	833425059	TAP-TIGHT SCREW 2.5TTP+5C (BC)
19	893030	E WASHER 3
20	833426037	TAP-TIGHT SCREW 2.6TTP+3S (BC)
21	24605753	SPRING
22	831126068	TAPPING SCREW 2.6TTW+6B (BC)
23	24611480	COVER (FW)
24	24605747	SPRING (EJECT)
25	24611380	DUMPER UNIT
26	891024	STOP RING

# PRINTED CIRCUIT BOARD PARTS LIST

## NAETC-3921-2

CIRCUIT NO.	PART NO.	DESCRIPTION
P301	25045139	HLJ0540-01

## NADIS-4266-2

CIRCUIT NO.	PART NO.	DESCRIPTION
	<b>IC</b>	
Q303	22240170	BA6800AS
Q721	22240084	HD614128SA41
	<b>Transistors</b>	
Q305, Q306	2213090	DTA114YS
Q722	2213284 or 2213285	2SC1740S-R or 2SC1740S-S
	<b>Display</b>	
Q723	212086	BG-801G
	<b>Ceramic osc</b>	
X702	3010143	CST3.00MGW
	<b>Capacitors</b>	
C351, C352	391941007	10 $\mu$ F16V, ELECT.
C353, C354	391942207	22 $\mu$ F16V, ELECT.
C721	391941007	10 $\mu$ F16V, ELECT.
	<b>Resistors</b>	
R351, R352	5215044	N08HR5KBC

## NAETC-4267-2

CIRCUIT NO.	PART NO.	DESCRIPTION
	<b>Resistors</b>	
R271	5104296	N14RGLC250KMN25Z
R273	5104260	N16RGL50KA25Z
R459	5104271	N14RLC5KB25Z
	<b>Switch</b>	
S201-S203	25035611	NPS-122-L573
S601, S602	25035611	NPS-122-L573
S604	25030351	NRSF-113-25SR8

## NASW-4268-2

CIRCUIT NO.	PART NO.	DESCRIPTION
	<b>LED</b>	
D711, D712	225141	SEL2213C
D714	225137CG	SEL2413CG
	225137DG or 225137DY	SEL2413DG or SEL2413DY
	<b>Switch</b>	
S701-S714	25035548	NPS-111-S510
	<b>Socket</b>	
P707A	2005230415	NSAS-4P0003
	<b>Holder</b>	
	27190764A	HOLDER(LED)

## NAPS-4270-2

CIRCUIT NO.	PART NO.	DESCRIPTION
C901	3500065A	0.01 $\mu$ F, AC400V/125V, IS
S901	25035558	NPS-111-L520P, POWER SWITCH

## NADG-4271-2

CIRCUIT NO.	PART NO.	DESCRIPTION
Q724	24130003	GP1U50XS

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